

CLAIMS

1. An apparatus for controlling operating features of a model train, comprising:
a plurality of selection devices each corresponding to a respective operating feature of said train;

5 a controller connected to said selection devices and operative to generate digital messages corresponding to said selection devices; and

a transmitter connected to said controller operative to send said digital messages to a receiver located on said train.

2. An apparatus in accordance with claim 1, wherein said plurality of selection devices are pushbuttons.

3. An apparatus in accordance with claim 1, wherein said controller is operative to create said digital messages using a frequency shift key method, and wherein said receiver is operative to decode said digital messages.

4. An apparatus in accordance with claim 1, wherein said transmitter is connected between said controller and said track, and further wherein said transmitter transmits said command signals to said track.

5. An apparatus in accordance with claim 4, further comprising a capacitor connected between said transmitter and said track.

6. An apparatus in accordance with claim 1, further comprising at a plurality of switches to control the form of said signals being transmitted to said train.

7. An apparatus in accordance with claim 1, wherein said controller is operative to monitor the voltage being applied to said track by way of a voltage sensor, and to then generate and transmit corresponding speed command signals to said receiver on said train.

8. An apparatus in accordance with claim 7 wherein said controller is operative to repeat said speed command signals to said receiver by using a que technique.

9. An apparatus in accordance with claim 1, wherein said controller is operative to generate and apply conventional DC Offsets to said track.

10. An apparatus in accordance with claim 9, further comprising:
a first resistor connected to said controller, and a first transistor connected between said first resistor and a first switching device; and
a second resistor connected to said controller, and a second transistor connected between said second resistor and a second switching device;
wherein said first switching device, when actuated, connects a negative DC offset supply to said tracks, and wherein said second switching device, when actuated, connects a positive DC offset supply to said tracks.

11. An apparatus in accordance with claim 10 wherein said switching devices are electromechanical relays.

12. An apparatus in accordance with claim 10 wherein said switching devices are solid state devices.

13. An apparatus in accordance with claim 1 further comprising a switching means for selecting between one of two of said trains that are operating on the same block of said track or between a first and second train operating on separate blocks.

14. An apparatus in accordance with claim 13 wherein said switching means is a pushbutton.

15. An apparatus in accordance with claim 13 wherein said switching means is operative to actuate automatically to one of said trains whose speed is altered.

16. An apparatus for controlling operating features of a model train, comprising:
a plurality of selection devices each corresponding to a different operating
feature of said train;

a controller connected to said selection devices and operative to generate DC
offset signals corresponding to said selection devices wherein said signals are delivered to a
track upon which said train is operating.

17. An apparatus in accordance with claim 16, wherein said plurality of selection
devices are push buttons.

18. An apparatus in accordance with claim 16 further comprising:
a first resistor connected to said controller, and a first transistor connected
between said first resistor and a first switching device; and

a second resistor connected to said controller, and a second transistor
connected between said second resistor and a second switching device,
wherein said first switching device, when actuated, connects a negative DC
offset supply to said tracks, and wherein said second switching device, when actuated,
connects a positive DC offset supply to said tracks;

19. An apparatus in accordance with claim 18 wherein said switching devices are
electromechanical relays.

20. An apparatus in accordance with claim 18 wherein said switching devices are
solid state devices.

21. An apparatus in accordance with claim 16, wherein said controller is operative
to monitor the voltage being applied to said track by way of a voltage sensor, and to then
generate and transmit corresponding speed command signals to said receiver on said train.

22. An apparatus in accordance with claim 21 wherein said controller is operative
to repeat said speed command signals to said receiver by using a que technique.

23. An apparatus in accordance with claim 16, further comprising at a plurality of switches to control the form of said signals being transmitted to said train.

24. An apparatus in accordance with claim 16, wherein said controller is operative to generate digital messages corresponding to said selection devices, and wherein said apparatus further comprises a transmitter to send said digital messages to a receiver located on said train

25. An apparatus in accordance with claim 24, wherein said controller is operative to create said digital messages using a frequency shift key method, and wherein said receiver is operative to decode said digital messages.

26. An apparatus in accordance with claim 24, wherein said transmitter is connected between said controller and said track, and further wherein said transmitter transmits said command signals to said track.

27. An apparatus in accordance with claim 24, further comprising a capacitor connected between said transmitter and said track.

28. An apparatus in accordance with claim 16 further comprising a switching means for selecting between one of two of said trains that are operating on the same block of said track or between a first and second train operating on separate blocks.

29. An apparatus in accordance with claim 28 wherein said switching means is a pushbutton.

30. An apparatus in accordance with claim 28 wherein said switching means is operative to actuate automatically to one of said trains whose speed is altered.

31. A method of controlling operating features of a model train, comprising the steps of:

providing a control box connected to a track on which at least one model train is operating, wherein said control box has a plurality of pushbuttons therein, each

5 corresponding to a different operating feature on said train, and which are connected to a controller;

producing a command signal by selecting a feature of said train by depressing one or more of said pushbuttons; and

delivering said command signal from said controller to said train.

32. A method of controlling operating features of a model train in accordance with claim 31 further including the step of selecting the form of said command signal.

33. A method of controlling operating features of a model train in accordance with claim 31, wherein said step of producing a command signal includes generating a digital message.

34. A method of controlling operating features of a model train in accordance with claim 33, further comprising the step of transmitting said digital messages from said microprocessor to said track.

35. A method of controlling operating features of a model train in accordance with claim 34, further comprising the step of transmitting said digital messages from said controller to said train using RF means.

36. A method of controlling operating features of a model train in accordance with claim 31, wherein said step of producing a command signal includes generating a DC offset signal.

37. A method of controlling operating features of a model train in accordance with claim 36 further comprising the step of transmitting said DC offset signal to said tracks.